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Irrigated Crop Recommendations for Alberta 1987-1988

Explanatory

This publication provides information on crop varieties for production under irrigation. Recommended varieties are listed for each crop, along with seeding rates and general fertilizer recommendations. With this information farmers can determine the variety and seeding rate for each irrigated crop.

Fertilizer recommendations

The general fertilizer recommendations are given for both nitrogen (N) and phosphorus (P_2O_5). The lower value for applied nitrogen should be used when soil test nitrogen is high or when optimum irrigation cannot be maintained. The higher value for applied nitrogen should be used when soil test nitrogen is low. For greatest nitrogen efficiency, nitrogen fertilizer should be deep banded rather than broadcast and incorporated.

When soil test levels of phosphorus are high, only a small starter application of P_2O_5 is required. The higher value for applied phosphorus should be used when soil test phosphorus is low. Phosphorus is more effective for most crops when banded near to the seed or drilled in with the seed. Care must be taken not to apply too much fertilizer with the seed as this can be toxic to seedlings. Broadcast and incorporated applications should be at least twice the drill-in rates to be equally effective.

Normally potassium (potash), sulfur and micronutrients are not required by most crops. When soil test levels of potassium (K) are less than 300 lb/ac, application of potash fertilizer should be considered. When soil test levels of sulfur are less than 10 lb/ac, sulfur fertilizer applications could be considered. Normally, however, there is enough sulfur in irrigation water to meet crop requirements. Approximately 30 lb/ac of sulfur is added to soil with each 30 cm (12 inches) of irrigation water.

Response to micronutrient fertilizers is uncommon for most irrigated crops grown on most soils. The only exception to this is irrigated field beans, which occasionally will respond to applications of zinc. Deficiencies occur with beans when soils are wet and cold in spring. Suspected micronutrient deficiency symptoms have been observed in a few corn fields, however, response to micronutrient fertilizers has not been confirmed. Generally, the micronutrient content of most soils in Alberta is sufficient to meet crop requirements.

For more detailed fertilizer information, refer to:

1. *Alberta Fertilizer Guide*, Agdex 541-1, March 1984.
2. *Applying Fertilizers Effectively*, Agdex 542-7, February, 1985
3. *Phosphate Fertilizer Application in Crop Production*, Agdex 542-3, January, 1987.
4. *Micronutrient Requirements of Crops in Alberta*, Agdex 531-1, March, 1983.
5. *Inoculation of Legume Crops*, Agdex 100/23-1, July, 1985

Disease, seed treatment

- Seed of rye and flax should be treated to control seedling blight and seed of canola to control flea beetles, seedling blight and the seed borne phase of black leg.
- Cereal smuts can be controlled with seed treatment fungicides. See Alberta Agriculture publication *Seed Treatment of Cereal and Oilseed Crops* (FS 100/632).
- Peas, beans, canola, sunflowers and lentils when grown under irrigation are highly sensitive to sclerotinia white mold. Proper water management - crop rotations, and the use of appropriate fungicides will result in higher yields.

Good seed

- Costs of crop protection are becoming extremely high -land use, machinery, fertilizers, chemicals, labor, etc. In relation to this total, the cost of GOOD SEED, a most important production factor, is very small.
- The only way to be absolutely sure of obtaining a particular variety is by the use of PEDIGREED SEED.

Copies of this and related publications may be obtained from the Print Media Branch, Alberta Agriculture, 7000 - 113 Street, Edmonton T6H 5T6 or Alberta Agriculture's District Offices.

Crop	Type	Yield Potential	Varieties	Seeding Rates	General Fertilizer Recommendations N (lb/ac)	P (lb of P_2O_5/ac)	Irrigation Requirements (L-M-H)
Wheat	Spring	85 bu/ac	Katepwa, Neepawa	90 lb/ac	35 - 110	20 - 50	M
	Durum	80 bu/ac	Medora, Wakooma	105 lb/ac	35 - 110	20 - 50	M
	Soft	110 bu/ac	Fielder/Owens	110 lb/ac-160 lb/ac	35 - 130	20 - 50	H
	Winter	65 bu/ac	Norstar	70 lb/ac	35 - 80 (spring applied)	20 - 50 (fall applied)	L
	3M	125 bu/ac	HY320	120 lb/ac	35 - 130	20 - 50	H
Barley	Malt	95 bu/ac	Harrington, Klages	90 lb/ac	35 - 110	35 - 50	M
	Feed	130 bu/ac	Galt, Samson	90 lb/ac	45 - 130	20 - 50	M-H
	Silage		Galt	90 lb/ac	50 - 130	20 - 50	M-H
Oats	Grain	135 bu/ac	Dumont, Calibre	85 lb/ac	35 - 80	20 - 50	M
	Silage		Foothills	85 lb/ac	35 - 80	20 - 50	M
Fall Rye		75 bu/ac	Cougar	85 lb/ac	30 - 70	20 - 50	L
Triticale	Spring		Welsh, Carman	100 lb/ac	35 - 90	20 - 50	M
	Winter	110 bu/ac	O.A.C. Wintri (silage only) O.A.C Decade	100 lb/ac	35 - 90	20 - 50	M
Annual Cereals for Pasture			Spring Seeded Winter Wheat	80 lb/ac	35 - 80	20 - 50	M
Canola	Argentine		Westar, Pivot, Global	6 - 9 lb/ac	35 - 140	20 - 50	H
Mustard	Yellow	2700 lb/ac	Gisilba, Cutlass	7 - 10 lb/ac	35 - 110	20 - 50	H
	Brown		Blaze	4 - 6 lb/ac			
	Oriental		Leth 27A, Stoke	4 - 6 lb/ac	35 - 110	20 - 50	H
Flax		40 bu/ac	Dufferin McGregor Noralta	30 - 40 lb/ac	20 - 80	15 - 40	M
Sunflower	Oilseed	2500 lb/ac	Dahlgren 704 X L' (see Man. Sunflower Comm. Rec.)	25 - 27,000 plants/ac			H
	Confection	22-2500 lb/ac	Dahlgren 131', Sigco 964', Agway 2141', Seedtec 043'	20 - 22,000 plants/ac	70 - 135	20 - 60	H
Potatoes	Early Processing		Norland Norchip, Netted Gem	Seed pieces 1-2 oz. 30 - 36 in. spacing between rows, 9-12 in. spacing within rows	90 - 170	90 - 150	H
	Storage	20 t/ac	Netted Gem				
Sugarbeets		25 t/ac	Use variety supplied by Contracting Co.	1.5 lb/ac; 6 in. spacing between plants; 22 in. spacing between rows	50 - 120	30 - 65	H
Safflower	Birdseed	3200 lb/ac	Saffire	25 lb/ac	35 - 90	25 - 50	L

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Corn	Sweet		Early King, Butter Vee	15,000 - 20,000 plants/acre	70 - 120	35 - 50	M
	Canning		Mellow Gold, NK75, Yukon, Reliance	15,000 - 20,000 plants/acre	70 - 120	35 - 50	M
	Silage	20 t/ac	Pioneer 3957, Pride 1131, Funks G-4086	30,000 - 33,000 plants/acre	80 - 150	45 - 60	H
	Grain	130 bu/ac	Pioneer 3995, 3969, Limagrain LG3 (See Hybrid Recommendation List — 1987 for full recommendations)	23,000 - 25,000 plants/acre	80 - 150	45 - 60	H
Peas	Canning		Early Sweet II, Anoka Nugget, Perfection 146	150 - 250 lb/ac	0 - 40 and proper seed inoculation with rhizobia leguminosarum[2]	30 - 40	M
	Freezer		Freezer 69, Venus, Scout Dark Skin Perfection	150 - 250 lb/ac			M
			Tipu, Century,	120 lb/ac			M
	Field (dry)	3500 lb/ac	Triumph,	215 lb/ac			
			Titan,	135 lb/ac			
			Trapper,	110 lb/ac			
			Victoria	110 - 135 lb/ac			
	Silage		Trapper,	70 - 100 lb/ac			M
			Cereal	40 - 60 lb/ac			
	Seed	3500 lb/ac	Use varieties supplied by contracting co.	Optimum: 12 seeds/yd of row			M
Alfalfa	Forage	5-6 ton/ac	Anchor, Pacer, DK 120, Beaver, Pioneer 524, Algonquin, Trumpet, Barrier.	10 - 12 lb/ac	0 - 30 and inoculate with rhizobia melitoti[2]	30 - 50 (annually) or 100 - 150 (when establishing stand)	H
	Seed		Use varieties where market demand is high	2 - 4 lb/ac			L
Sainfoin			Melrose, Nova	35 lb/ac	0 - 30 and inoculate with "F Inoculate" (Nitragin Co.)[2]	50 - 80	H
Grass	Brome		Baylor, Magna, Regar, Carlton, Manchar	Refer to Varieties of Hay and Pasture Crops for Alberta, Adgex 120/32	For Hay: 90 - 120	0 - 40	M-H
	Kentucky Blue		Troy				
	Orchardgrass		Chinook, Kay				
	Slender Wheatgrass		Revenue				
	Tall Fescue		Alta		For Pasture: 100 - 170		
	Tall Wheatgrass		Orbit				
	Timothy		Bounty, Champ, Climax				
	Reed Canarygrass*		Castor, Frontier				
	Pubescent Wheatgrass		Greenleaf				
Grass	Legume 20 to 40%				45 - 90	30 - 60	
Grass	Legume 40 to 60%				10 - 35	30 - 60	

** Should not be grown adjacent to irrigation canals or drain ditches*

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Canary Seed			Commercial types, Alden, Keet, Elias	35 - 50 lb/ac	30 - 60	20 - 50	M
Dry Beans	Pinto	2200 lb/ac	UI 111 Fiesta, D81123	70 lb/ac	10-40 and inoculate seed properly with rhizobia phaseoli[2] (D culture) - inoculated dry beans will provide up to 35% of N requirements - some varieties (e.g. Red Mexican) are less responsive to inculation, and may respond to N application of 70 - 100 lb/ac. - increased N applications may increase risk of sclerotinia disease.	30 - 40 zinc application may be necessary when soil tests low or P_2O_5 application is high	M
	Red Mexican	2200 lb/ac	UI 36 NW63, D79144, Garnet				
	Pink Bean	2200 lb/ac	Viva Harold Victor				
	Great Northern	2200 lb/ac	UI 1140				
	Navy Bean	1900 lb/ac	Seafarer, Pulsar Northland, Midland	38 - 50 lb/ac			
Fababeans		2500 - 4000 lb/ac	Akerperle, Diana Outlook, Aladin Pegasus, Encore Herz Freya	175 - 200 lb/ac optimum 6 - 7 seeds/yd of row	0 - 40 and inoculate with rhizobia leguminosarum[2] (Q culture)	30 - 60	H
Soybeans		35 bu/ac	Maple Amber, Maple Ridge, KG 20, Baron	90 lb/ac (for solid seeding)	10 - 30 and inoculate with rhizobia japonicum[2]	20 - 40	M
Lentils[3]		12-2000	Eston Laird Commercial[1]	35 lb/ac 75 lb/ac 60 lb/ac	10 - 20 and inoculate with rhizobia leguminosarum[2] (C culture)	20 - 40	L

[1] *Unlicensed commercially contracted varieties.*

[2] *Fertilizer application rates are based on inoculation with specific rhizobia bacteria to obtain nitrogen fixation. An appropriate sticker should be used to obtain proper seed/inoculant contract.*

[3] *These crops can be adversely affected by intensive irrigation. Overwatering of these crops can lead to increased disease pressure and seriously delayed maturity.*

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